Canadian Space Agency | Agence spatiale canadienne

The Canadian Space Strategy

Serving and Inspiring the Nation

- Science
- Exploration
- Environment
- Expertise

www.space.gc.ca

Canada

Since its creation in 1989, the Canadian Space Agency has pushed back the frontiers of space science and technology to benefit Canada and the world.

Table of contents

Acknowledgements 4

Foreword 4

The Canadian Space Agency's Vision 6

Introduction 8

Section I: Core Thrusts of the Canadian Space Strategy 12

Earth Observation 13

Space Science and Exploration 15

Satellite Communications 16

Space Awareness and Learning 16

Section II: Essential Building Blocks 18

A Strong Science Capacity 20

A Proficient Technology Base 20

Qualified Test and Operations Infrastructures 21

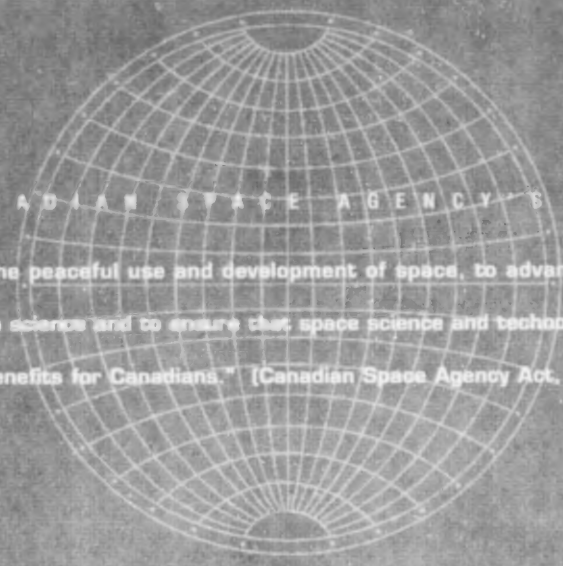
A Dynamic Space Industry and Expanded Markets 22

Forging Partnerships 22

Conclusion 24

Appendix 1: Strategic Planning Tree 26

Appendix 2: Links with the Government of Canada's Strategic Outcomes 27



THE CANADIAN SPACE AGENCY'S MISSION

"...to promote the peaceful use and development of space, to advance the knowledge of space through science and to ensure that space science and technology provide social and economic benefits for Canadians." (Canadian Space Agency Act, S.C. 1990, c.13)

The world is a
and those who do
travel, read only

Augustine, philosophe
and theologian

ACKNOWLEDGEMENTS

The Canadian Space Strategy was developed through extensive consultations during the summer and early fall of 2003. The Canadian Space Agency would like to thank its employees and stakeholders for their outstanding participation in developing this strategy. The quality of their contribution is matched only by their dedication to our national space program, and their professionalism in making it a model of excellence that improves the lives of all Canadians.

FOREWORD

The Canadian Space Strategy was approved by the Canadian Space Agency on November 12, 2003. It replaces the Long Term Space Plans as the framework that guides the Canadian Space Agency in leading Canada's national Space Program.

The Canadian Space Strategy is a concise overview that will serve as a tool for planning purposes, and for providing our stakeholders and partners with insight on Canada's strategic directions regarding space. The Strategy is not intended to replace or duplicate other planning documents produced by the CSA, in particular, those submitted annually to Parliament as part of the Government of Canada's overall management process. The strategic planning tree in Appendix 1 helps situate the Canadian Space Strategy with respect to other key planning documents.

The Canadian Space Strategy will be reviewed regularly, and will evolve with the environment that characterizes and influences Canada's space activities.

We welcome your suggestions for improvement. Please forward comments to the following addresses:

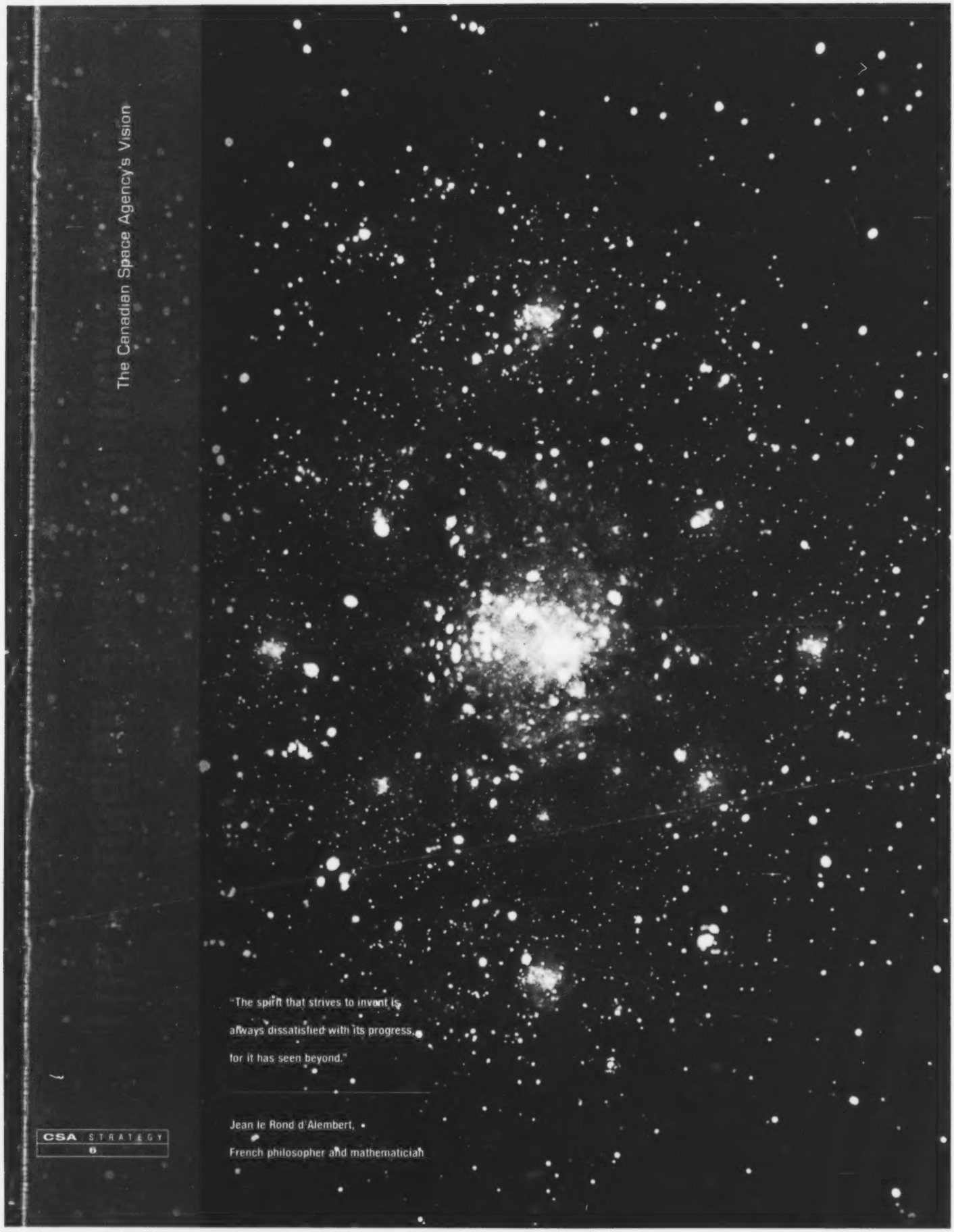
By regular mail:

Director, Strategic Development
Canadian Space Agency
6767 route de l'Aéroport
Saint-Hubert, Quebec
J3Y 8Y9, Canada

By e-mail: strategy@space.gc.ca

This strategy is also available on the Internet at: www.space.gc.ca

Ce document est également disponible en français



"The spirit that strives to invent is always dissatisfied with its progress, for it has seen beyond."

Jean le Rond d'Alembert,
French philosopher and mathematician

We, at the Canadian Space Agency, are resolutely committed to using space as one of our country's most valuable vehicles for serving Canada and the world. By expanding and applying our knowledge for the benefit of Canadians, we will realize the full promise that space has to offer all of humanity in this new century. We will dream boldly, imagine freely, and push the frontiers of our knowledge and abilities to turn our dreams today into the science and technology of tomorrow. And as we strive to reach new heights in space, we will inspire and amaze every single Canadian, and instill in them a sense of pride in our accomplishments.

OUR VISION FOR CANADA'S FUTURE IN SPACE IS ONE IN WHICH WE WILL:

- explore, develop and harness the potential of space in some of the most incredible initiatives humanity has ever undertaken. We will work in concert with our partners to make significant contributions to advance scientific knowledge of our world, the Universe and our place in it;
- lead Canadian citizens and communities to take full advantage of the benefits space has to offer, particularly in the areas of telecommunications and Earth Observation, and to take their place among the top users of space products and services in the world;
- integrate space fully and completely in Government of Canada departments and agencies as an invaluable tool to help fulfill their mandates and reach our Government's goals for Canadians;
- build upon our innovative national partnership linking government, industry and research institutions so that the Canadian model becomes an international paradigm for effective cooperation.

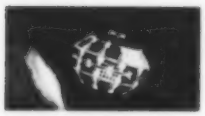
Turning the dreams of today into the discoveries of tomorrow.

"To confine our attention to terrestrial matters would be to limit the human spirit."

Stephen Hawking, physicist and philosopher

Space embodies the very essence of innovation. The quest for space requires the skills and creativity of highly talented people to generate knowledge, develop advanced technologies and apply them in new, creative ways to meet the needs of citizens, governments, scientists and industries. Improving the economic and social well being of Canadians has always been—and will remain—the central motivation of the exceptional women and men working at the Canadian Space Agency and its numerous partners across the country.

Space is a strategic priority that enables Canadians to meet their economic, social and political objectives.



Canada's proud legacy in space spans over four decades, dating back to the launch of Alouette-1, which made us the third nation in space.

As Canadians, we are proud of our country's achievements in space. Canada was the third nation in space with the launch of its first science satellite in 1962. We are internationally renowned as pioneers in satellite communications, and can boast the world's first national communications satellite system in 1972, as well as the first direct broadcast satellite in 1976. With the first flight of the Canadarm on the Space Shuttle in 1981, and now the Mobile Servicing System on the International Space Station, we have become world leaders in space robotics. Since the first voyage of a Canadian into space in 1984, our astronauts have inspired our citizens and made valuable contributions to advancing human space flight. Since its launch in 1995, Radarsat-1, our groundbreaking Earth Observation satellite, has earned us international recognition as experts in space-based remote sensing. And Canadian space scientists have made breakthrough contributions in areas as diverse as astrophysics, life sciences, and the dynamics of the atmosphere. These are but a few examples of Canada's forty-year space legacy, which is continuing to fascinate and inspire Canadians.

Canada's success in space is due in large part to a well-orchestrated, sustained vision of how space can address issues of concern to Canadians. As a nation rich in natural resources, with the second largest landmass and the longest coastline in the world, space provides our country with an unparalleled vantage point to observe, monitor and manage the wealth of our natural heritage and biomass through the watchful eyes of Earth Observation satellites. To solve the challenges of connecting our communities across the vast expanse of our territory, we turned to advanced communications satellites to link our population from large urban centres to remote settlements. And as a country that strives to promote the ideals of democracy, peace and international cooperation throughout the world, Canada is using space to make salient contributions to international initiatives in science, the environment, security and safety, and global communications.

By concentrating on meeting national needs, Canada's approach has led us to develop tremendous scientific and technical capabilities in space, including:

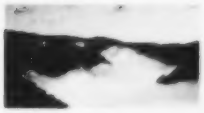
- a vibrant space science community with a strong tradition of first-class research;
- a competitive space industry, custodian of our technology base and driving the design, manufacturing, operation and commercialization of state-of-the-art space hardware, as well as ground-based applications, products and services;
- world-class government laboratories and personnel, who generate next-generation technologies through advanced research and development, which are then transferred to Canadian industry; and finally,
- fruitful national and international partnerships that leverage both private and public investments through joint endeavours.

Canada is singularly well positioned to build on its heritage to maintain leadership in applying space to meet the ever-increasing challenges of the global, knowledge-based society.

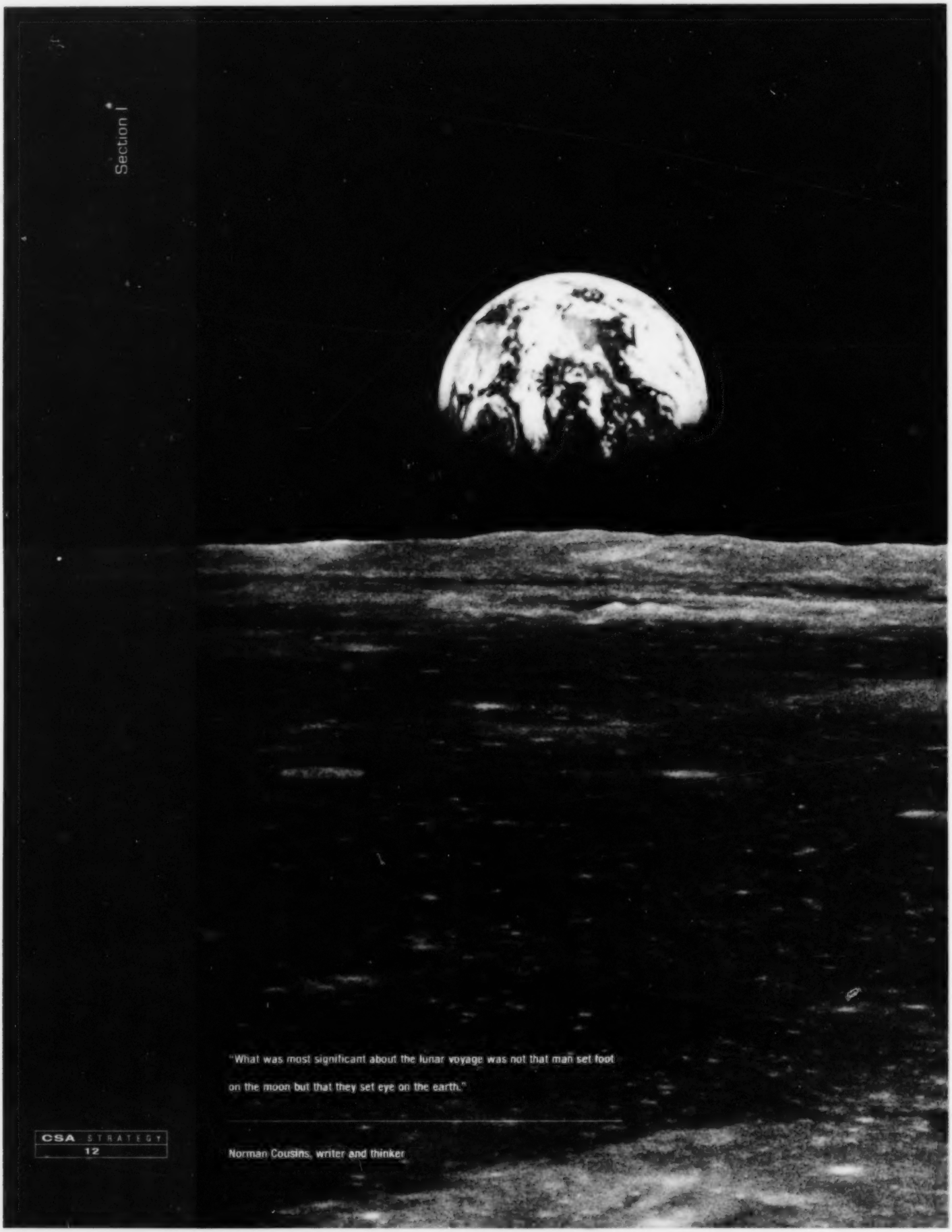
There is no doubt space will increasingly be called upon as a unique and essential means to address several issues currently growing in importance, from those faced by individuals to those shared by all of humanity. Space is consequently recognised as a national priority by countries seeking to retain scientific, commercial, social and political leadership. In addition to being an instrument of national development, space will also continue to offer affordable solutions to address international issues beyond the scope and resources of any single nation, such as global security, peacekeeping, and climate change.

Space needs to be recognised as a national priority for Canada to continue to serve the needs of citizens, governments and industry in the decades to come and beyond. It is no longer an option for us to question whether a space program has a place in our future, but whether we have a future without a space program.

The Canadian Space Strategy is the blueprint that will help Canada chart its goals in space, and outlines how we will seize the countless opportunities before us to meet our national needs, display international leadership and develop our potential to the fullest.



It is no longer an option for us to question whether a space program has a place in our future, but whether we have a future without a space program.



"What was most significant about the lunar voyage was not that man set foot on the moon but that they set eye on the earth."

Norman Cousins, writer and thinker

CORE THRUSTS OF THE CANADIAN SPACE STRATEGY

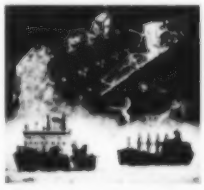
Canada must continue to use space for the betterment of Canadians in four main ways:

- to look down upon the Earth to observe, monitor and protect life below;
- to look out into the depths of space to explore, learn and discover more about the Universe, as well as our place in it;
- to look upon space as a means of communicating with each other by relaying information via satellites; and
- to look to space as a source of inspiration to inform Canadians about their country's advances in science and technology, and increase scientific literacy among our citizens.

These four areas form the core programmatic thrusts of the Canadian Space Strategy. This section presents an overview of these four strategic areas in which the CSA will lead Canada's activities in space.

EARTH OBSERVATION

Space-based observation of the Earth provides us with unique and essential information to understand how our oceans, atmospheric and land-based environments work and interact together. Gaining a better knowledge of these delicate balances will help us better understand how they might evolve in the very near as well as long-term future, allowing, for instance, more accurate weather forecasting and enhanced ability to predict the effects of climate change. Observing the Earth from space also provides us with crucial data to help protect and manage our natural resources for sustainable development and the future health of our planet. And finally, space-based Earth Observation technologies help support security and safety initiatives, as well as other national and global policy issues.

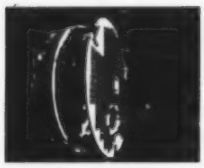


RADARSAT-1 tracks ships and ice sheets along our coastal zones.

Given Canada's geopolitical situation, our immense territory, our rich natural resources, the changes now occurring in our climate, and our international stature as peacekeepers and champions of democracy, innovative Earth Observation technologies will become increasingly important for our country. Therefore, the Canadian Space Agency will maintain and expand Canada's leadership in Earth Observation technologies to obtain the timely, relevant and essential information we need to make judicious decisions about our collective future. The Canadian Space Agency will attain these objectives by collaborating with national and international partners that share our needs and goals.

Earth Observation—Target Results

Provide space data and information by developing and using key technologies that will make it possible to:



SCISAT-1 helps us better understand and monitor the impact of chemical pollutants on the ozone.

ENVIRONMENT

» Better understand and monitor the key parameters and processes of the Earth, atmosphere, oceans, cryosphere and biosphere systems and their interrelationship;

» Predict and measure the impact of climate change on land, marine and atmospheric environments and the changes in key factors influencing climate change;

» Support operational environmental applications, such as pollution detection, ice monitoring and mapping, wetlands mapping, coastal change detection and accurate weather and climate forecasting & modeling;

» Support environmental policy and decision-making at all levels through the provision of scientific advice on issues including air quality, water quality & quantity and biodiversity.

RESOURCE & LAND USE MANAGEMENT

» Develop and implement policies and regulations for the orderly and sustainable development of natural resources and agriculture;

» Support decision-making processes of public and private sectors related to sustainable resource development and management;

» Support land use management at national, regional, and local levels.

SECURITY & FOREIGN POLICY

» Support the surveillance of Canada's territorial land and coastal sovereignty and related national security issues;

» Support disaster management and emergency response in Canada and abroad, including the protection of critical infrastructures;

» Support Canada's effort to play an active, visible and key role in initiatives stemming from its foreign policy, particularly in peacekeeping operations, humanitarian assistance and transborder issues (pollution, fisheries, etc.).

SPACE SCIENCE AND EXPLORATION

The exploration of space is one of the most ambitious and prominent scientific and technological endeavours humanity has ever undertaken—from our first steps off our home planet; to building the International Space Station; to next-generation space telescopes that beam back dazzling images of distant galaxies; to space probes and roving landers that explore planets and other bodies in our solar system, and one day, beyond. Canada's worldwide reputation for exceptional science instrumentation and robotics, as well as the outstanding skills of its astronaut corps, are the key strengths that position our country to compete and succeed in this highly demanding field.

The Canadian Space Agency will sustain and increase Canada's contribution to humankind's scientific knowledge, the exploration of our solar system and the Universe. The CSA will advance our fundamental and applied knowledge of chemistry, physics and life sciences by carrying out leading-edge experiments in the unique environment of space.

"It's human nature to stretch, to go, to see, to understand. Exploration is not a choice, really; it's an imperative."

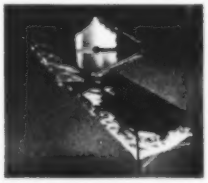
Michael Collins

Space Science and Exploration—Target Results

ASTRONOMY AND THE SOLAR SYSTEM

To develop and utilize the essential space infrastructure so that Canadians can expand their knowledge of:

- The origin, formation of structure and evolution of the Universe;
- The constituent elements and origins of life; chemical and physical properties and dynamics of planets, as well as the physical nature of small celestial bodies;
- The physics of solar storms and their impact on the space and Earth environments.



Canada is providing the accurate pointing system for the James Webb Space Telescope, the successor to the famed Hubble Space Telescope. Our contribution ensures that Canadian scientists will have direct access to this unique space astronomy facility.

PHYSICAL SCIENCE AND LIFE SCIENCES

To ensure the necessary human capital and the essential space infrastructure are in place to enable Canadians to:

- Expand their knowledge of the basic principles of physics, chemistry and biology by performing science in the unique environment of space, and use that knowledge to develop new products and to improve existing applications;
- Expand their knowledge of the basic characteristics of the space environment and its effects on the biological and physiological processes of living organisms;
- Apply this knowledge in order to support the human exploration of the solar system and improve health conditions here on Earth.

SATELLITE COMMUNICATIONS

"In the second century of Confederation the fabric of Canadian society will be held together by strands in space just as strongly as the railway and telegraphy held together the scattered provinces in the last century."

John H. Chapman, Father of the Canadian Space Program

Satellites are the core of the communication infrastructures at the regional, national and international levels, and complement land-based networks. From assisting search and rescue teams in locating people in distress, to providing geopositioning information to manage logistics for ships, trucks and aircraft fleets, to giving schoolchildren in rural areas access to virtual classrooms, satellites provide an increasingly diverse range of products and services.

Satellites are also the most economical way to connect users to advanced communication services, since they eliminate the need for extensive, cumbersome ground-based infrastructure—a particularly important factor for countries like Canada, with its large territory and sparse population, or for developing nations that may not have the resources for land lines.

Satellite telecommunications hold the power to link all Canadians, particularly those living outside major urban centres, and offer access to communications networks so that even our most remote communities can secure their part in the knowledge-based society and economy. Furthermore, satellites can enhance the delivery of a number of vital public services to ensure universal access to all Canadians, particularly in fields like distance learning and tele-medicine.

The Canadian Space Agency will uphold Canada's status as a world leader in satellite communications, and extend the most advanced products and services to all Canadians, everywhere.

Satellite Communications—Target Results

To generate space technologies and essential ground-based applications that will:

» Ensure all Canadian communities, particularly those located in Northern Canada, have access to state-of-the-art space communication networks, products, and services, including applications such as tele-medicine, navigation, search and rescue; and

» Support government agencies and departments in accessing advanced communications capabilities to carry out their mandates.

When launched in 2004, Canadian satellite ANIK F2 will provide high-speed Internet access to Canadians located in communities across the country urban, rural and remote.

SPACE AWARENESS AND LEARNING

The quest for space has always inspired individuals, communities and entire nations to reach for their highest aspirations, and challenge the best of their abilities. The allure of exploration, discovery and learning more about our world and the Universe beyond

also stimulates our creativity and our imagination, and sparks an interest in the sciences and technology. The women and men who dedicate their careers to space—from scientists, to engineers to astronauts—provide our children with positive, strong role models, as well as the motivation to pursue higher education in science and engineering.

If Canada is to cultivate further its capacity to conduct breakthrough science, and continue to be on the forefront of technological innovation, we must attract, develop and retain highly qualified personnel in science and engineering, including space-related fields. In order for Canada's population to be among the world's most literate citizens in science and technology, we must promote Canadians' interest in science by sharing with them our discoveries and achievements in space in meaningful and engaging ways.

The Canadian Space Agency will continue to inform Canadians about our nation's activities and successes in space. The CSA will strive to increase scientific literacy in Canada by using space to captivate the imagination of Canadians, and stimulate young minds to pursue knowledge-intensive careers.

"If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea."

Antoine de Saint-Exupery, writer and aviator

Space Awareness and Learning—Target Results

AWARENESS

Provide Canadians with accurate and up-to-date information to:

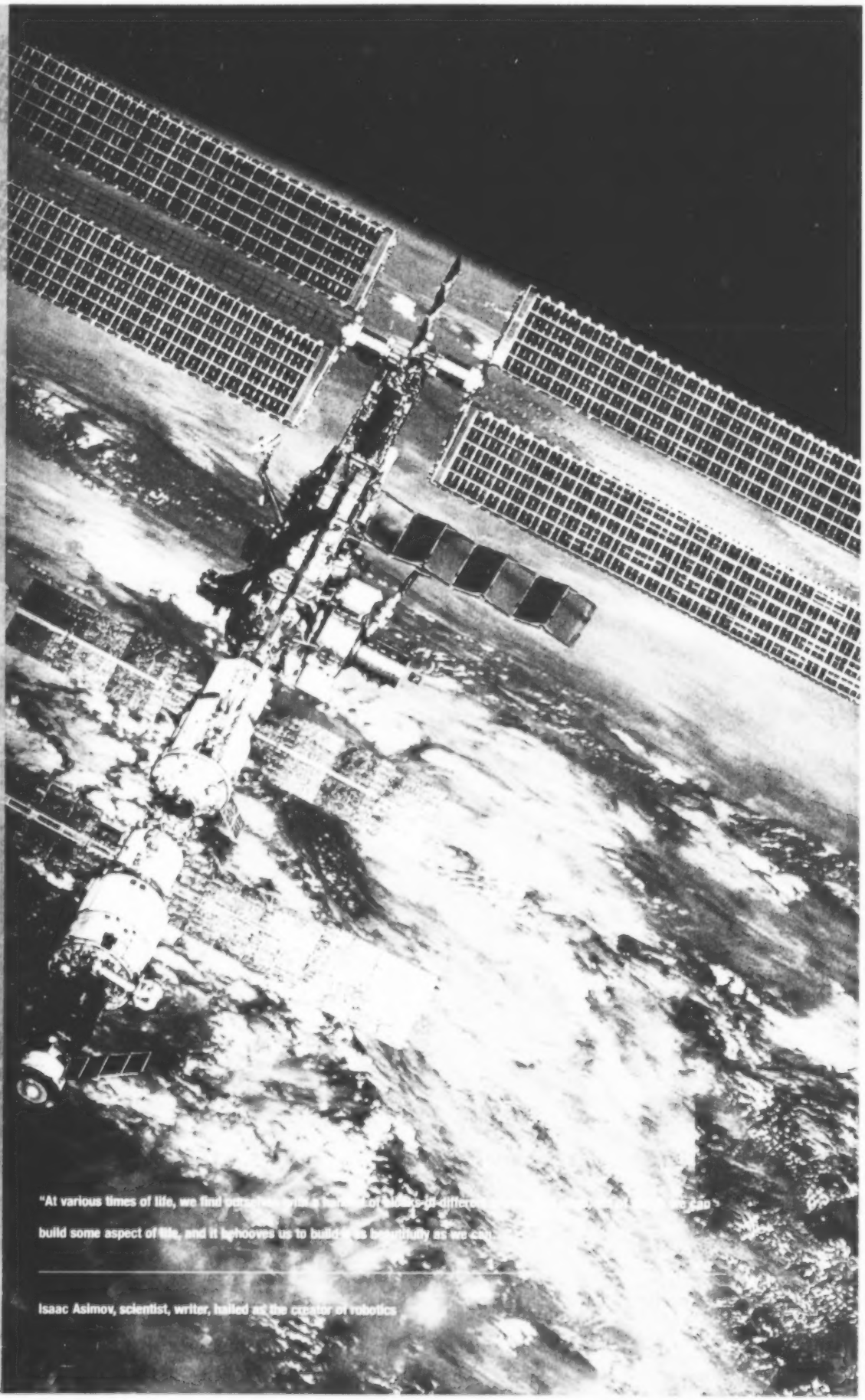
- Enhance Canadians' understanding of the role of space in our daily lives;
- Ignite an interest in the latest scientific discoveries of the Universe, as well as environment, material and life sciences, and technological advancements in space; and
- Increase knowledge of—and our pride in—Canada's achievements in space, and our contribution to the international community.

National surveys repeatedly show that four out of five Canadians are proud of our achievements in space, and believe that space can encourage students to pursue careers in science and technology.

LEARNING

To use the unique appeal of space and our out-of-this-world role models to:

- Attract our children to the sciences and technology and stimulate their interest for studying mathematics, physics, chemistry and biology;
- Inspire students to pursue higher education in the sciences and engineering;
- Nurture the development of space scientists and engineers by involving them in space-related research and development projects during their undergraduate and post-graduate education.



"At various times of life, we find ourselves [illegible] build some aspect of life, and it behooves us to build [illegible]

Isaac Asimov, scientist, writer, hailed as the creator of robotics

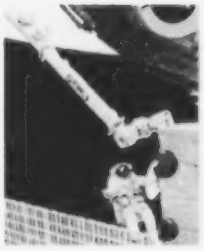
ESSENTIAL BUILDING BLOCKS

Space-faring nations must have access to five basic capabilities:

- the specialized knowledge and workforce required to generate scientific knowledge;
- the ability to use this knowledge to create new technologies;
- the skills needed to build and test technology-intensive space products and ground-based applications;
- the capacity to launch humans, satellites and other systems into space; and finally,
- the ability to operate and use space and ground-based assets.

Canada is securing its future as a space-faring nation through a well balanced combination of domestic capabilities and international partnerships. This model allows Canada to concentrate its efforts in specific areas of expertise, while consciously securing others through a diverse set of international partnerships. A prime example is the Canadian Space Agency's decision not to invest in the development of orbital launch vehicles, securing this capacity through either commercial means or partnership arrangements with other nations.

This section defines the essential building blocks the Canadian Space Agency will nurture to ensure Canada is able to meet its target results as identified in each of the four core thrusts of the Canadian Space Strategy. By using sound, reliable performance indicators to measure the status of these building blocks on an ongoing basis, the Canadian Space Agency will ensure that we reach our goals and produce the results that Canada needs from its national space program. Fully accountable to Canadians, the CSA will report on these indicators, and provide clear and readily available performance information in its annual reporting to Parliament.



"Too low they build, they who build beneath the stars."

Edward Young

A STRONG SCIENCE CAPACITY

Fundamental and applied sciences fuel the advancement of new technologies, which are, in turn, the engine of innovation and evolution. They also help governments of all levels develop balanced policies in areas as diverse as agriculture, air quality and health care. Canada must possess the critical mass of intellectual capital to create and use knowledge. The increasing importance of space in our day-to-day lives makes it imperative for our country to have a strong space science community, capable of generating knowledge within our own borders, and able to share and exchange knowledge with our international partners.

The CSA recognizes that our space science capacity must reside in Canadian universities and, where needed, in government departments and industry. The Canadian Space Agency will work with national granting councils and other funding partners to:

» encourage the entry and emergence of new space science researchers in Canada, particularly through small, short-term projects;

» provide greater support to researchers with the proven potential to become world leaders in their field;

» stabilize long-term support to a critical mass of the best research teams, particularly those in fields identified as Canadian priorities;

» promote and stimulate cooperation and complementary research between academic institutions, industry and government organisations, particularly when it supports government policy decisions or the development of new technologies and products in Canadian industry.

Canada has world-recognised expertise in the design, operation and use of Earth Observation sensors, space robotics, communication payloads and scientific instrumentation.

A PROFICIENT TECHNOLOGY BASE

To many, space is synonymous with technology. As one of the most technology-intensive sectors, space is often hailed as the hallmark of technologically advanced nations. If Canada is to continue to use space to fulfill our national priorities, we must ensure that the necessary expertise resides within our own borders. While this does not mean complete domestic autonomy, Canada must have its own core technology base to meet our unique requirements, as well as the skills and capabilities that will make us an appealing partner for other countries.

Hence, Canada will remain selective in the technologies it selects. The Canadian Space Agency will work with its partners to ensure that Canada has a competent, relevant technology base of:

» payload technologies;

» platform and infrastructure technologies;

» generic technologies; and

» applications technologies.

Canada's technology base must be dynamic to evolve with the changing nature of our national needs and objectives in space as influenced by national and international environments. Accordingly, the Canadian Space Agency will maintain an appropriate balance of advanced and applied research and development activities. The Agency's advanced research and development will create new technologies by expanding our knowledge, and developing innovative concepts and products. Through applied research and development, the Canadian Space Agency will improve existing technologies, and reduce the risk associated with their use or the cost of their production.

The Canadian Space Program–a driver of Canadian innovation

While most of our national technology base will reside and be developed in industry, some areas of expertise will be maintained in universities and government organizations. The Agency must, for instance have an in-depth understanding of technological advances in order to provide judicious stewardship for our national space program. The CSA must also further the few technologies that are more efficiently developed in government labs and transfer this knowledge and capacity to industry whenever appropriate.

QUALIFIED TEST AND OPERATIONS INFRASTRUCTURES

In order for Canada to pursue its space program to the fullest, we must preserve our ability to assemble, integrate and test the space systems of our choice. Canada must also have the ability to operate the critical components of its ground and space-based infrastructure. This requires adequate test, integration, and operation infrastructures. The Canadian Space Agency will encourage private-public partnerships to maximize the efficient utilisation of facilities and equipment based in Canada. We will also open those to our international partners, provided Canadian interests and requirements are protected.

A DYNAMIC SPACE INDUSTRY AND EXPANDED MARKETS

The Canadian space industry generates 40% of its revenues through exports, the highest export ratio in the world (2002 data).

The Canadian Space Agency recognizes that the best means of turning scientific and technological advancements into innovative products and services is through industry. Industry is also the best vehicle for providing a broad range of services to diverse groups of users—from individuals to public and private organizations. With its highly skilled workforce, the space industry in Canada not only generates wealth in our economy, but also provides Canadians with competitive products and services that would otherwise have to be procured from foreign sources.

The Canadian Space Agency will continue to foster the growth of a viable, vibrant space industry in Canada. The Agency will promote our national space industry as the primary custodian and developer of our space technology base, including our capability to design, build and where and when appropriate, operate space and ground-based assets.

Canada's space industry must be sufficiently large and diverse to meet our needs and goals in space. We must also sustain the high calibre of products and services our industry has demonstrated to date. However, given that the Canadian market is relatively small, it is critical that industry be able to leverage foreign investments and generate export sales. Capitalizing on export revenue depends on industry's ability to commercialize highly competitive products and services, as well as the Government of Canada's ability to establish open trade regulations with its closest international partners. In order to help industry meet and succeed these challenges, the Canadian Space Agency will align its programs and actions to build synergies that will bolster industry's competitiveness and market development efforts.

FORGING PARTNERSHIPS

National and international partnerships, the foundation of the Canadian Space Program, are absolutely vital to the implementation of the Canadian Space Strategy, and allow all parties to pool efforts and resources to achieve common ambitions in the most productive manner.

National partnerships

Cooperation between scientists in government and academia; coordination between industry and the Canadian Space Agency to establish the most relevant technology base; and the alignment between research and development, hardware manufacturers and service providers are among the many partnerships that must exist in Canada to ensure that we continue to have a dynamic national space program. For the majority

of its initiatives, the Canadian Space Agency expects its stakeholders and partners to ramp up their support and resource investments as we collectively move up the maturity path towards actual provision of goods or services.

Given the potential of space to provide applications directly related to the public good, one of the Canadian Space Agency's most important objectives is to accelerate the pace and depth at which Government of Canada departments and agencies use space to help them fulfill their mandates. The Canadian Space Agency will also work with other government departments to assist them in addressing the needs of provincial, territorial and municipal institutions. Meeting this objective requires a firm commitment from concerned departments and agencies, as well as the mobilization of human and financial resources that go beyond those provided by the CSA. To this end, the Canadian Space Agency will:

- seek new and existing government requirements in which space can make a positive contribution;
- develop the means to satisfy these needs in cooperation with Canadian industry;
- harmonize its investments and activities with those of client departments as part of an integrated, user-oriented approach.

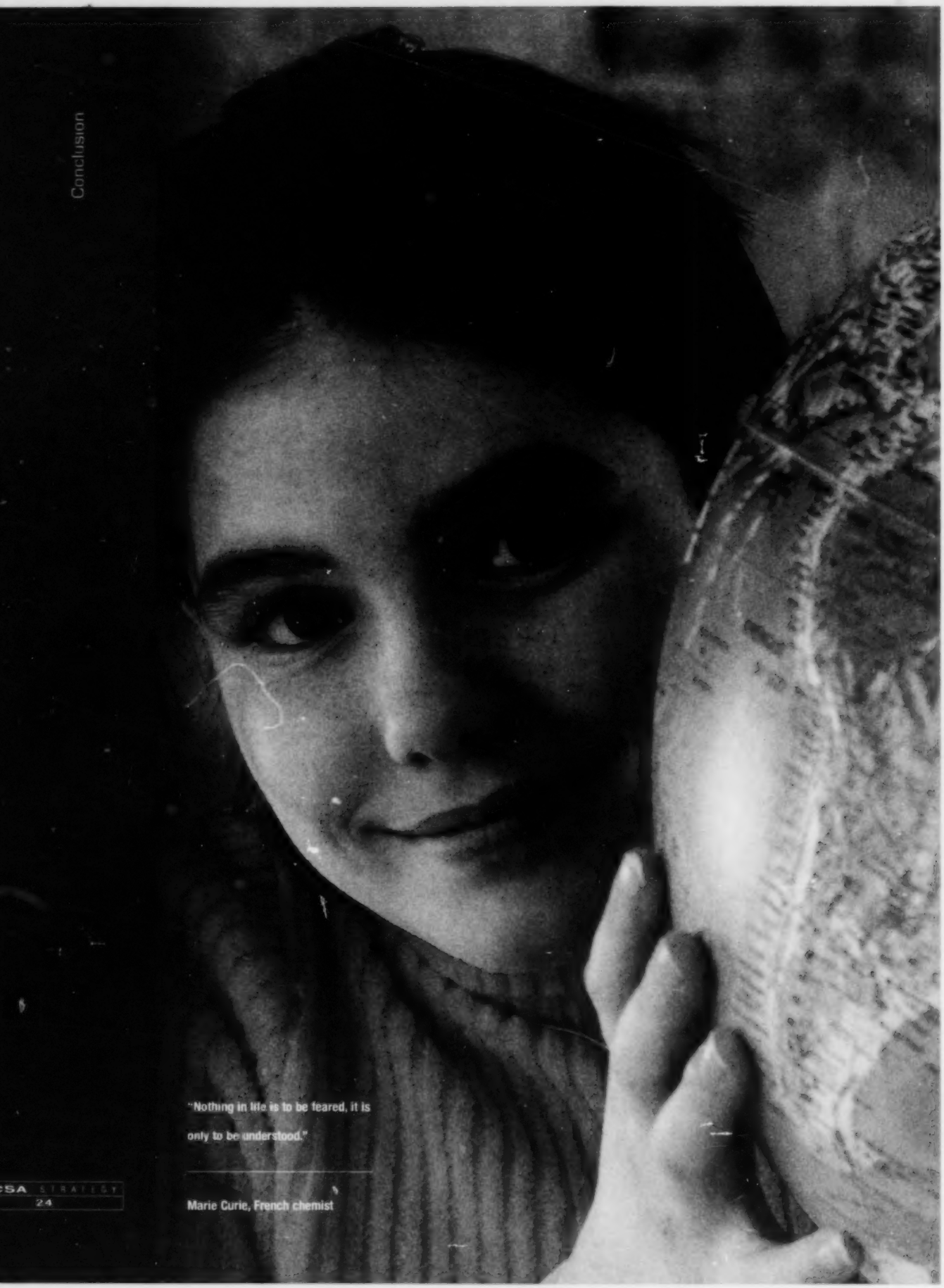
These approaches to national partnerships will make certain that space services are relevant and sustainable, and will help further develop a viable, competitive commercial space market in Canada.

International partnerships

Space offers a window of opportunity to global solutions to address issues that literally transcend the scope of any one nation, such as environmental management; climate change treaties; mitigating natural disasters; and global security and surveillance. Canada must be prepared to make vital, meaningful contributions to such multilateral efforts—not only to respond to our national needs, but also to take leadership in international collaborations, and promote Canadian values, as well as our scientific and technological capabilities.

International cooperation channels are also important to complement our domestic capabilities, and strengthen relationships between Canadians and foreign governments, scientists and private sector organisations. The Canadian Space Agency will continue to make a concerted effort to strengthen strategic international partnerships of interest to Canada, while ensuring that our national expertise, products and services make Canada a partner of choice for other nations and private entities.

Canada is a cooperating member of the European Space Agency and enjoys productive partnerships with the USA, Japan, Russia and numerous other nations, including newcomers to the ranks of space-faring nations.



"Nothing in life is to be feared, it is only to be understood."

Marie Curie, French chemist

Pioneering space science and technology for Canada's future...

In less than half a century, space has become an integral part of our lives: from wireless communications that bridge vast distances; to global weather and climate change predictions; to understanding the mysteries of the Universe, all the while amazing and inspiring people everywhere. Whether it involves advancing our knowledge through science, or using leading-edge technologies to develop next-generation applications and services, space fulfills the needs of people, government, the research community and industry in a very direct, tangible way.

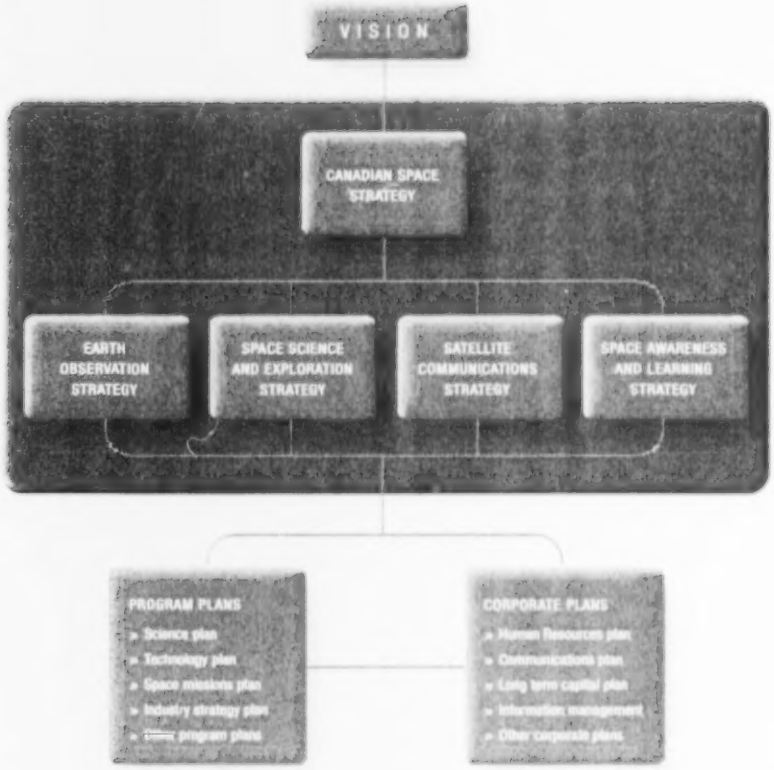
Today, Canada plays a leading role in areas such as telecommunications, Earth Observation and space science because the Government of Canada and its partners remained steadfastly committed to their early vision of our collective future. Space will continue to be increasingly important in our daily lives as we face pressing global challenges such as sustainable economic development; understanding and protecting our planet's fragile environment; providing individuals with access to communications services; and, promoting safety and security through peaceful measures. Canada must continue to consolidate its expertise and capabilities in space, and devote its attention to accelerating the pace of knowledge creation and its transition towards social and economic improvements.

Guided by the Canadian Space Strategy, the CSA will continue to lead our national Space Program to ensure that Canadians benefit fully from such advantages as the growth of commercial and export revenues in industry, to increasing national security, to inspiring us all to pursue our highest individual, as well as collective, aspirations. The resources required to attain those goals far surpass those of the Canadian Space Agency. Achieving our objectives will require strong, dynamic and productive partnerships between the science community, industry and all levels of government organisations in Canada, as well as strategic cooperative arrangements with other nations.

Building on the achievements of our remarkable legacy, the Canadian Space Agency will champion the vision of the Canadian Space Strategy to assure our nation's future in space. We will summon the best of our creativity, imagination, ideas and knowledge and focus them through service to our country, inspiring and unlocking the promise of tomorrow for each and every Canadian. We will seize upon our national spirit as pioneers and adventurers, and confidently take our nation's next steps in the greatest adventure humankind has ever undertaken. And we will strive to make yet another indelible mark in the annals of human history that reads, "Made in Canada."

The following diagram situates the Canadian Space Strategy in the CSA planning process. The Canadian Space Strategy, along with its four supporting Thrusts Strategies, constitutes the Integrated Space Strategy. It is through this Integrated Space Strategy that the CSA develops its tactical and operational plans, such as its Technology Development Plan, Science Plan, Human Resources Plan and the Industry Strategy Implementation Plan.

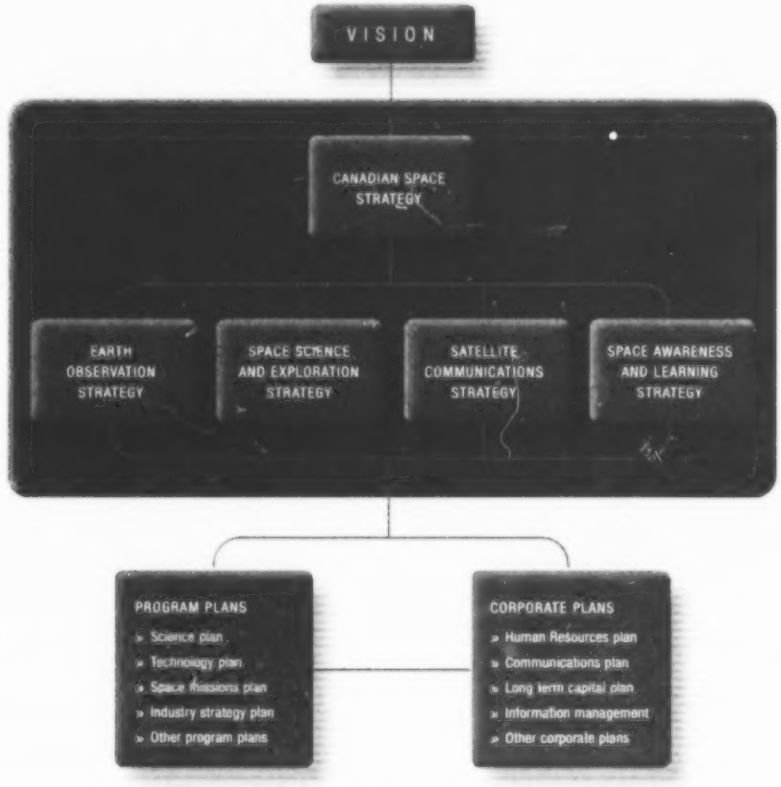
In addition to the documents identified in this diagram, the CSA also produces other high level documents, such as the Report on Plans and Priorities and the Departmental Performance Report, both of which are submitted annually to Parliament as part of the overall Government management process. These documents provide additional information on the CSA's planning and management framework and performance data related to its effective use of financial and non-financial resources.



APPENDIX 1
STRATEGIC PLANNING TREE

The following diagram situates the Canadian Space Strategy in the CSA planning process. The Canadian Space Strategy, along with its four supporting Thrusts Strategies, constitutes the Integrated Space Strategy. It is through this Integrated Space Strategy that the CSA develops its tactical and operational plans, such as its Technology Development Plan, Science Plan, Human Resources Plan and the Industry Strategy Implementation Plan.

In addition to the documents identified in this diagram, the CSA also produces other high level documents, such as the Report on Plans and Priorities and the Departmental Performance Report, both of which are submitted annually to Parliament as part of the overall Government management process. These documents provide additional information on the CSA's planning and management framework and performance data related to its effective use of financial and non-financial resources.



APPENDIX 2
LINKS WITH THE GOVERNMENT OF CANADA'S STRATEGIC OUTCOMES

This appendix is currently under development as part of the broader Government-wide exercise to review its policies related to the planning and reporting structure of departments and agencies.

Once completed, this appendix will define clearly how the CSA contributes to the Government of Canada's strategic outcomes in such areas as the economy, the environment, health or the strength and safety of Canadian communities. The indicators and measures of performance produced through this exercise will be used to quantify and qualify the ability of the Agency to deliver results for Canadians, and will serve as the backbone of future reports to Parliament.